

## Memorandum

**Date:** August 6, 2008

**To:** Mr. John Kirlin, Executive Director  
Delta Vision

**From:** Mr. Donald Koch, Director  
Department of Fish and Game

**Subject:** Comments on the Second Staff Draft Delta Vision Strategic Plan

The purpose of this memorandum is to provide to you comments on the second staff draft Delta Vision Strategic Plan, dated July 11, 2008. We have organized our comments by the following topics: governance and finance; the Delta ecosystem and water supply reliability; and science, monitoring, and adaptive management. We have also included specific comments on the draft Strategic Plan which are attached to this memorandum (Attachment A).

We are pleased to see the Strategic Plan and earlier Delta Vision report state the co-equal goals of a healthy estuarine ecosystem along with water supply reliability. We believe this is a major step towards resolving the many years of conflict in the Delta between endangered fish species, other public trust resources and reliability of export water supplies. Restoring the ecological functions and the populations of species relying on the Delta are not new goals or ideas but are nonetheless critically important. The CALFED Ecosystem Restoration Program identified these goals as early as August 2000 with the signing of the CALFED Record of Decision.

We believe we are now at a crossroads in terms of the Delta's future and that the draft Delta Vision Strategic Plan charts an improved direction for its future management. Implementing the broader Delta Vision will have many challenges associated with it and will be no small task, but we believe it is the best hope we have today for the Delta's future.

### Governance and Finance

The draft Strategic Plan has a recommendation to create a multi-part governance structure that includes a California Delta Ecosystem and Water Council (CDEW Council) responsible for developing and adopting the California Delta Ecosystem and Water Plan (CDEW Plan). Another component of the multi-governance structure includes a California Delta Conservancy to undertake ecosystem restoration and enhancement projects and other activities pursuant to the CDEW Plan. Finally, the governance structure would include a Delta Science and Engineering Board and a strengthened Delta Protection Commission.

*CDEW Council*

It appears to us that the CDEW Council would have many of the same responsibilities and powers as the California Bay Delta Authority (CBDA), including the provision that the Council would not subsume the authority of existing agencies but would have the authority to determine whether the actions of those agencies are consistent with the CDEW Plan.

We are concerned that the CDEW Council governance structure may succumb to the same problems cited by the Little Hoover Commission (LHC) for CBDA in *Still Imperiled, Still Important*.<sup>1</sup> The LHC report said there was a fundamental tension between CBDA as a facilitating entity and as a decision-making entity. Some participants in CALFED felt that it focused too much on coordination while others believed it reached too far in that it involved itself in the decisions that are under the authority of the implementing agencies. Lack of a clear operating model was problematic for CBDA and could stymie progress for the CDEW Council as well. Strong leadership, clear authorities and mechanisms to ensure accountability will be essential to a successful CDEW Council. We believe that we should go forward with lessons learned from CBDA and the CALFED Program and, to the greatest extent possible, build upon what was successful and not start with a blank slate.

A mechanism to ensure that state and federal agencies carry out their missions consistent with the CDEW Plan could be achieved through compliance with an updated Water Quality Control Plan for the Delta in conjunction with the Bay Delta Conservation Plan Implementing Agreement. A second approach could involve application of the Coastal Zone Management Act to the Delta.

*California Delta Conservancy*

The draft Strategic Plan has a recommendation to create a California Delta Conservancy to undertake ecosystem restoration and enhancement projects and other activities pursuant to the CDEW Plan. The Conservancy would coordinate with non-governmental organizations, businesses, property owners, and all units of government. The Conservancy would also assume responsibility for state-ecosystem-related projects now underway in the Delta, Suisun Marsh, and the Special Area Management Plan areas and acquire lands and easements (agricultural and conservation) to support ecosystem, sustainable agriculture and water reliability goals. It would also implement state and federal programs for mutually beneficial mixtures of agriculture, habitat, and outdoor recreation. If a conservancy is created for the Delta, we would recommend the Department and Wildlife Conservation Board be made part of the governing board as was done with the San Joaquin River Conservancy.

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<sup>1</sup> Little Hoover Commission Review of the CALFED Bay-Delta Program. 2005.

The Department has a long and successful history of working with conservancies to accomplish its mandates, goals and objectives. In 2007, for example, the Department collaborated with the State Coastal Conservancy, along with state commissions and councils, state and federal agencies, and non-governmental entities, to implement a variety of projects in areas along the California coast. These projects included wetlands restoration; non-native invasive species eradication; wildlife habitat restoration; data collection, research, and monitoring; and projects to improve public access for compatible recreation.<sup>2</sup> We believe a conservancy modeled after the San Francisco Bay Conservancy, focused on cultivating partnerships to facilitate implementation of ecosystem restoration consistent with the ecosystem restoration element of CDEW Plan should be considered.

The draft Delta Vision Strategic Plan touches on many of the Departments' existing roles and responsibilities. The Department is the state agency with jurisdiction by law over fish and wildlife resources and is recognized as a public trust agency under the California Environmental Quality Act. The Department is also a regulatory agency administering the California Endangered Species Act, the Natural Community Conservation Planning Act (NCCPA) and other laws for the preservation of fish and wildlife as found in the Fish and Game Code, Title 14 of the California Code of Regulations, and other statutes and regulations. The Department has a long history of protecting and managing public trust resources of the State. We are a land manager of State Wildlife Areas and Ecological Reserves in the Delta and Suisun Marsh. The Department also provides recreational opportunities for hunting, fishing, wildlife viewing, and nature interpretation.

Recognizing the importance and degraded condition of the Delta ecosystem and its use as a major water supply in California, the Department reorganized itself last year and consolidated all Bay-Delta-related regional and branch functions into the new Bay-Delta Region in order to bring greater focus and efficiency to Bay-Delta issues. As part of the reorganization, we also formed the Water Branch to address complex Delta and statewide water policy issues. The Water Branch consists of three program units: Bay-Delta Conservation Plan (BDGP), Ecosystem Restoration Program (ERP), and Statewide Water Planning. The Department also formed Regional components of the Water Branch to help address complex water policy throughout the Delta watershed and statewide.

We believe that form should follow function, therefore desired functions and expected outcomes should drive the structure of a governance entity. We

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<sup>2</sup> Coastal Conservancy 2007 Accomplishments. [http://www.coastalconservancy.ca.gov/News/2007\\_Accomp.pdf](http://www.coastalconservancy.ca.gov/News/2007_Accomp.pdf)

recommend first developing a "master plan" for the Delta which uses the ERP Conservation Strategy as the foundational ecosystem component. We should then determine the necessary governance structure to implement each piece of the master plan (Note that we already have an existing structure to implement the ERP, as described in the paragraph below). An "adaptive governance" structure that recognizes and strategically engages and empowers existing authorities of local and other governmental agencies and land use entities to successfully implement the Delta Vision Strategic Plan Goals (and actions) would be essential to successful implementation of the master plan. A dispersed model which capitalizes on the existing programs and support within the existing agencies, yet focuses attention on completing the Strategic Plan would be more cost- and process-efficient. As an example, if certain aspects of the master plan require strategic implementation bodies, the adaptive governance structure can be used to form, facilitate and eliminate such bodies once the goals (purpose of that body) have been met.

The Department is the state implementing agency for the Ecosystem Restoration Program (ERP) and works closely with the federal implementing agencies, the National Marine Fisheries Service (NMFS) and US Fish and Wildlife Service (USFWS), to ensure regulatory and policy consistency and agreement on strategic priorities for the protection of fish and wildlife. The ERP is guided by a common set of strategic goals and objectives which the CALFED agencies agreed would be the "single blueprint" for ecosystem restoration and recovery in the ERP focus area. The Department, along with our federal partners, is responsible for planning, implementing and evaluating the ERP and is currently finalizing the ERP Conservation Strategy for the Delta, which we believe should be the master plan or blue print for future ecosystem restoration.

ERP program implementation is based on an annual work plan. Grants are issued based on available bond funding with decisions guided by the ERP Strategic Plan, evaluated through the science- based project review process that incorporates independent science and technical review and evaluation using the Delta Regional Ecosystem Restoration Implementation Program (DRERIP) conceptual models. With the lack of the BDPAC and CBDA, outside review of selected actions beyond the implementing agencies does not occur. We are currently discussing new public advisory roles for the CALFED Ecosystem Restoration Subcommittee with the co-chairs of that subcommittee. The CDEW Council could also provide oversight for ERP progress towards achieving performance targets of the CDEW Plan.

Accountability and transparency are key objectives of a new Delta Conservancy and are essential ingredients for the Delta's future. If stable, long-term funding were available for existing organizations to implement their obligations and

authorities, successful long term planning and operations would result, along with the transparency and accountability so essential to success. We can achieve these objectives under existing authorities of the various agencies, including local, state, and federal agencies, without duplicating or creating a new layer of bureaucracy. We want to ensure that any additional institutions are value-added rather than duplicative of existing authorities or creating conflicting authorities and processes. For example, the Wildlife Conservation Board (WCB) has existing authority to acquire fee title lands and easements and expend money for habitat restoration. WCB has a good track record of performance and can act expeditiously to administer funds for these purposes. Funding for WCB actions can also be continuously appropriated and received directly through legislation.

The Department serves as a member of the BDCP Steering Committee and is one of the regulatory agencies, along with USFWS and NMFS, that would need to issue take authorizations for species affected by BDCP covered activities. The strength of the BDCP permitting and regulatory processes will largely derive from the partnership between the federal fish and wildlife agencies, the permit applicants, and other stakeholders through the very involved process of collaborative planning and permit development. Since the BDCP is scheduled to complete its environmental documentation and permitting by the end of 2010, it is essential that BDCP and Delta Vision are closely coordinated as these processes develop final plans and are completed.

#### *Finance principles and environmental water*

The CALFED Record of Decision incorporated a beneficiary pays principle but was unable to implement it. However, the "beneficiaries pay" principle is consistent with the Natural Community Conservation Plan Act (NCCPA) approach, where costs are apportioned to public, private and local beneficiaries. Through the NCCPA, numerous major, ecosystem based planning and conservation efforts have seen tremendous success. The key limitation of the Department or any other manager of ecosystem lands is adequate and stable funding to carryout the management obligations associated with the land. Under the current approach to ecosystem restoration, acquisitions and restoration projects are funded through bonds but no mechanism is readily available to fund ongoing management. Where lands are acquired as part of mitigation for single projects or as part of natural community conservation plan/habitat conservation plan, long term funding through endowments or other secure funding sources are required to assure future management in perpetuity.

The Strategic Plan recommends that environmental water to support the Delta ecosystem should not be purchased, but rather provided through other mechanisms. Examples include a per-acre foot fee levied on water diversions in

tributary watersheds and water exports for use south of the Delta. We also believe that public trust allocations, whether through water quality and power license proceedings or other forums, are also important to continue, and that adequate environmental water must be left in the Delta as part of a multi-prong strategy to restore the Delta ecosystem. We also recommend dedicating a proportion of any new isolated conveyance capacity and new storage projects (e.g. groundwater or surface) for environmental purposes.

It is also important to point out there was a CALFED ROD commitment that was never accomplished to develop and implement an Environmental Water Program to augment flows on upstream tributaries, in coordination with other water programs such as the CVPIA water acquisition program and Level 2 and Level 4 water supplies for refuges, to improve fish and wildlife habitat and anadromous fish species. The Department believes that accomplishing flow objectives on upstream tributaries is an important goal that should be part of an overall Delta solution.

#### The Delta ecosystem and water supply reliability

The BDCP Steering Committee last year adopted the Points of Agreement which said that a new point or points of diversion on the Sacramento River in the north Delta, and an isolated conveyance facility around the Delta, appeared to be the "most promising" approach to help achieve species conservation and water supply goals. The Department has been on record for many years saying that isolated conveyance would reduce impacts on Delta fish populations if instream needs within the Delta are met. The recently published PPIC report on *Comparing Futures for the Sacramento-Joaquin Delta*<sup>3</sup> has also come to this same conclusion.

Operational scenarios described in the draft Strategic Plan range from the exclusive use of an isolated conveyance facility to the combined use of a new facility in conjunction with existing export facilities in the south Delta. The draft Strategic Plan also describes flow-related actions in some level of detail, both in quantity and duration of flows. Detailed water operations modeling and evaluation is occurring in the BDCP process, as well as in OCAP. The EIS/EIR for the BDCP will also evaluate alternative operational scenarios for new facilities as well as a range of reasonable alternatives. Since this is a NEPA document all of the alternatives will need to be evaluated at the same level of detail. We believe that flow targets and performance targets in the draft Strategic Plan should be described as "provisional targets" that will be updated once detailed modeling runs and evaluations are completed.

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<sup>3</sup> Public Policy Institute of California. July 2008

The ERP Conservation Strategy and the draft Delta Vision Strategy acknowledge that water is habitat. We believe this recognition is essential as we move forward to develop strategic approaches and actions to improve water quality and water temperature, improve Delta inflows and outflows, increase residence time, improve fish passage and rehabilitate ecosystem components essential to fish survival and reproduction. We also recognize the importance contributions from the Delta tributaries can make towards ensuring adequate flow timing and volume to sustain Delta inflows, safe fish passage and rearing above and within the Delta, and outflow to the Bay for the survival of fish species. There are also important linkages between inadequate water quantity and quality and stressors such as non-native invasive species and contaminants that gain in recognition as we complete the ERP Conservation Strategy. It should be recognized that the ERP Conservation Strategy addresses not only the Bay and Delta but the tributary watersheds.

Delta Vision has the opportunity to build a bridge between agencies that regulate water quality and quantity and those agencies that manage natural resources. Perhaps the recommendations of Delta Vision could be incorporated into the California Water Plan (the 2009 revision is underway) to formalize and emphasize the needed cooperation. While the Department and the Water Boards are working to develop a more integrated relationship, the Water Plan could stress the point that agencies managing water quality, quantity, and habitat should identify and implement the most viable ways to effectively combine resources to meet the co-equal ecosystem and water supply goals.

#### Science, monitoring and adaptive management

The Department has been implementing scientific programs and collecting long-term monitoring data for decades and therefore strongly supports the science-based management recommendations in the draft Strategic Plan. A number of existing entities, including the Interagency Ecological Program (IEP), CALFED Science Program and Independent Science Board perform similar functions as those described in the draft Strategic Plan. We recommend that you consider how to build upon existing scientific and monitoring programs that are being implemented in the Bay-Delta system.

The IEP is currently investigating the factors behind the pelagic organism decline (POD) and collects monitoring data in the Bay-Delta as part of the IEP effort. The Department (along with USFWS and NMFS) uses these data in making recommendations to the Department of Water Resources and U.S. Bureau of Reclamation to make operational changes to Delta export pumping facilities to protect fish species. These recommendations are presented in the Water Operations Management Team (WOMT) meetings and communicated to

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stakeholders via Operations ("Ops") Group meetings. The Department has developed excellent working relationships with the Project agencies (DWR and USBR) and stakeholders in the WOMT and Ops Group meetings. These existing venues appear to be carrying out the rules of the proposed Delta Operations Team.

We support the development of a long-term monitoring program and robust adaptive management plan. Implementation of an adaptive management and comprehensive monitoring, assessment, and research program (CMARP) was the responsibility of the CALFED Science Program but was never fully realized. We recommend completing the CALFED ROD commitment to develop and implement the CMARP Program on a watershed scale to include the upstream areas and tributaries to the Delta. The Department in cooperation with the federal implementing agencies will be developing performance measures and the assessment tools to evaluate the effectiveness of ERP implementation in meeting established goals and objectives and to support adaptive management decision making.

We are pleased to see the recognition of the value of conceptual models (such as those being developed in DRERIP) and clear performance measures, which the Department has been developing in collaboration with the federal fish agencies and CALFED Science Program under the umbrella of the ERP Conservation Strategy. The ERP Conservation Strategy along with conceptual models and scientific evaluation tools are scheduled for completion before the end of this summer and will be integral to the adaptive management and monitoring program for Delta Vision.

Thank you for the opportunity to provide input on the draft Strategic Plan to the Task Force. If you have any questions please contact Mr. Carl Wilcox, Chief, Water Branch.

cc: Mike Chrisman, Secretary, Resources Agency  
Joe Grindstaff, Director, CBDA  
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Attachment A

DFG Comments on  
DELTA VISION STRATEGIC PLAN  
Second Staff Draft

Strategy 6. Reduce or remove stressors to the Delta ecosystem, including (but not limited to) invasive species, contaminants, migration barriers, and entrainment.

Action 6.1: Control harmful invasive species at existing locations and in newly restored habitat areas.

Action 6.2: Minimize methylmercury production and/or transport.

Action 6.3: Reduce export effects on fish, including instituting pumping restrictions, fish screens, and diversion management and relocation where appropriate.

Action 6.4: Monitor fish and wildlife health at suspected toxic sites as part of a comprehensive regional monitoring program.

Action 6.5: Construct pilot-scale water treatment wetlands, to research impacts and benefits for Delta species, and, if deemed to be beneficial, construct these wetlands wherever feasible at municipal, industrial, and agricultural returns.

Action 7.2: Develop mechanisms to increase the implementation of agricultural and urban water use efficiency measures and link state funding to achievement of efficiency goals.

Action 8.2: Work with the federal government to modify flood management operations at existing major multi-purpose reservoirs to accommodate periodic floodplain inundation and/or obtain additional water supply yield while maintaining flood control capacity.

Action 8.3: Coordinate with the Central Valley Flood Protection Plan to increase flood conveyance capacity along the lower San Joaquin River, including through the Delta, so that floodplain areas along the lower San Joaquin River can be periodically inundated, and/or water supply yield from terminal multi-use reservoirs in the San Joaquin Valley can be increased.

Action 8.7: Institute comprehensive basin management planning to address the availability, quality, and managed use of regional groundwater resources for ecological and water supply uses.

Action 8.8: Encourage infiltration or direct use of precipitation throughout the Delta watershed and export areas, to augment water supplies for ecological and water supply uses.

Action 10.4: On the portions of publicly-owned western Delta islands that are deemed too deeply subsidized to provide ecological benefits, manage a land-use transition to recreation, terrestrial habitat, subsidence reversal, carbon sequestration, dredged material handling and appropriate agriculture.

- p. 1, Lines 21-22: The Delta's status as a unique and valued area warranting recognition and special legal status from the State of California is already recognized by existing law, including (but not limited to) the Delta Protection Act of 1992. There are existing programs, mechanisms, and entities that are already in place in the Delta which are well suited to carry out the Strategies and Actions in this Strategic Plan at the local or grassroots level, and these should be utilized to the maximum extent feasible before new programs and entities are pursued.
- "Performance target schedule table" on page 4: Any financial investments in Delta levees and highways should not be in conflict with pursuit of the two co-equal goals. The recently-released PPIC "Comparing Futures" report has specific recommendations on what investments in levees and/or infrastructure might be prudent in light of ecosystem enhancement and water supply priorities for the Delta.

## **Ecosystem**

- p. 6, line 6: Replace the word "Support" with the word "Achieve"
- p. 6, line 14: It is not clear what is meant by "Provide important human services" means in the context of ecosystem enhancement.
- p. 7, lines 8-18: See suggested edits to Actions above.
- p. 7-8: Performance target schedule – the ERP implementing agencies are reviewing these performance targets as part of its activities in finalizing the ERP Conservation Strategy for the Delta and Suisun Planning Area. This analysis, and suggested ecosystem performance measures and targets resulting from the analysis, will be complete in early September 2008.

## **Water Supply Reliability**

- p. 9, lines 21-22: How does "creating a wet period diversion, conveyance and storage system to the greatest feasible extent" minimize ecosystem stress and prepare for climate change? These issues are not fully understood yet.

Diverting water during wet periods and storing that water may just amplify other issues such as X2. In addition, wet periods may become shorter and more intense in the face of climate change, which may not be conducive to relying on diversions during wet periods.

- p. 9, lines 28-29: See suggested edits to Action 7.2 above.
- p. 9, lines 48-50: See suggested edits to Action 8.2 above.
- p. 10, lines 2-5: See suggested edits to Action 8.3 above.
- p. 10, lines 18-22: See suggested edits to Actions 8.7 and 8.8 above.
- p. 12, lines 40-42: See suggested edits to Action 10.4 above.

## **Governance and Finance**

- p. 15, lines 6-10: The statements about abundant water and ecosystem resources, and how well it has served our needs, is certainly not true for the Delta, and was the impetus for creation of the CALFED Program in the early 1990s. Recommend that the last two sentences of this first paragraph be deleted, and that the first two paragraphs be combined into one.
- p. 15, lines 20-27: Problems such as decision-making based on insufficient information, and the inadequacy of measurement, reporting, and enforcement capabilities, are largely due to limited staff and funding that have been allocated to existing agencies to effectively carry out their programs. These problems could be addressed within these existing programs, with adequate funding.
- p. 15, lines 29-30: This statement isn't completely accurate regarding ecosystem management entities (lines 32-34). State and federal fisheries agencies, have been implementing the Ecosystem Restoration Program, in cooperation with CALFED, since 2000 and are completing the ERP Conservation Strategy for the Delta and Suisun Planning Area.
- p. 15, line 38: Add the word "federal," before the word "state". Likewise, add "and federal governments" after the word "state" in line 40, and change the word "its" to the word "their".
- p. 16, lines 18-22: The last sentence of this paragraph states that "the Council would not subsume the authority of existing agencies ...", but the Strategic Plan recommends that ecosystem restoration activities would be the responsibility of the CDEW Council, and the Council would implement these activities through the Delta Conservancy. This appears to be an inconsistent approach.
- p. 19, lines 7-8: after the word "prepared", add the words "by the State agencies currently responsible for protecting those interests"
- p. 21, line 13: add the words "and evaluate water rights" after the word "regulate", and delete the words "existing water rights and on" after the words "based on".

## The Delta Ecosystem

- Strategy 4 and Actions (starting on p. 30): DFG, in cooperation with SFEI, is undertaking a historical ecology project, whereby maps, journals, and other materials are being used to generate information on the Delta's historical ecology, to determine the feasibility and desirability of restoring habitats in the Delta. This information will be incorporated into the ERP Conservation Strategy for the Delta and Suisun Planning Area later this year, and will provide good insight to this Strategy and associated Actions.
- p. 32, lines 30-31: While true that the San Joaquin River watershed provides less Delta inflow, occasionally high flood flows along the lower San Joaquin River have been problematic for residents in the south Delta at times (thus the construction of a "superlevee" to the west of the River Islands development on Stewart Tract). There is still very much a desire to establish floodplain areas along the lower San Joaquin River, particularly on Pescadero Tract. With consideration of possible reservoir re-operation for ecological and/or water supply benefits (as proposed in Strategy 8), there may be increased opportunities for floodplain inundation along the lower San Joaquin River.
- p. 32, line 23: It would be helpful to define "high-value agriculture" here. Urbanized areas with impervious surfaces can't be easily "reclaimed" for ecological purposes as undeveloped areas. Existing "high-value agriculture" may not be sustainable in certain areas of the Delta and may be areas better suited for alternative, sustainable uses consistent with the Strategic Plan.
- p. 35, lines 30-32: It may not be entirely accurate to state that efforts along the lower San Joaquin River "would have a lower priority". The importance of re-establishing species' use of the San Joaquin River system, particularly as a migration route (e.g. fall-run Chinook), is a high priority of the fish agencies. By establishing multiple "separate" populations of a species, we increase the chance of its persistence over time.
- p. 37, lines 12-13: This text calls for San Joaquin River flow pulses in the fall for adult Chinook attraction. Higher spring flows are also needed to simultaneously improve tributary habitat conditions and increase outmigrant salmon survival.
- p. 37, lines 18-21: This text proposes removing the Roe Island (Port Chicago) trigger for X2 which requires that X2 already be at or downstream of Roe Island in the latter half of the previous month (14-day average EC at Roe Island < 2.64 mmhos/cm). If triggered, then the number of days X2 is required to be at or downstream of Roe Island in the following month is then determined by the 8-River Index in the month just ending. Eliminating the "trigger" would likely mean the Roe Island X2 requirement would apply more often than under water rights Decision 1641 (D-1641). This could have implications upstream, including reservoir storage and flow and water temperature management.

The main difficulty with WQCP Delta standards that are tied to the 8-River Index (and implemented by D-1641) is that DWR and BOR have no control on three of the eight rivers (Yuba, Tuolumne, and Merced), little control on one (Stanislaus), and another, the upper San Joaquin River, is rarely connected to the Delta. SWP and CVP operations to comply with the Roe Island component of the X2 standard can require large amounts of water and cause erratic reservoir release patterns that may impact fish in the rivers below dams. One solution is to spread the responsibility to meet Delta standards among other rivers (reservoirs). In the 1990s hearings on D-1641 the fisheries agencies advocated an "ecological fair share" approach as the way to achieve this (get water from all eight river with big reservoirs, in proportion to the size of the watershed [or some other measure]). Because the concept does not fit easily into water rights priorities, the "ecological fair share" approach was not embraced by the SWRCB at that time.

- p. 37-38, lines 30+: The plan should be more clear regarding what "near the exports" means. The action should also address entrainment of primary and secondary productivity (phytoplankton and zooplankton).
- p. 39, lines 5-6: Potential changes to reservoir flood control rules with benefits for ecological values may be possible and should be explored, but would have to be evaluated carefully.
- p. 39, line 7: In recent times DWR began pumping at Banks during the day (despite higher energy costs) because they noticed fewer delta smelt were salvaged. But they continued to fill Clifton Court Forebay roughly during the higher stages of the tide which can occur day or night. It is not clear that fewer fish were being entrained with daytime pumping, even though it appeared fewer fish were being salvaged. The observation could have something to do with differential visibility and fish behavior, altering screen effectiveness, and salvage. Perhaps this action is intended to apply to a Sacramento River diversion into an isolated facility?
- p. 39, lines 12-13: See suggested changes to Strategy 6 above.
- p. 39, line 17: After the word "facilities", add the following text: ", physical and chemical barriers to migration (which includes dams as well as dissolved oxygen and temperature barriers),"
- p. 39, line 23: Both primary and secondary productivity are the Delta's "food" – primary productivity consists of the algae and phytoplankton which feed secondary organisms such as zooplankton and diatoms (which largely make up the food base for the Delta's aquatic species).
- p. 39, lines 29-32: Entrainment "throughout the Delta", in small agricultural diversions, has historically not been believed to substantially impact aquatic species of concern; this is, however still under investigation. Once these potential impacts have been evaluated, it is likely that actions such as relocating or re-operating diversion points and improving fish screens will be prioritized on the basis of whether these diversions are located in particularly important habitat areas (i.e. such actions wouldn't necessarily be implemented "Deltawide", but rather where the most ecological "bang for the buck" can be expected).

- p. 39, line 43: See suggested changes to Action 6.1 above.
- p. 39 (line 45) -40 (line 16): DFG's Invasive Species Program is implementing these activities under the auspices of the California Aquatic Invasive Species Management Plan, and is doing so in parallel with development of the BDCP's conservation measures and multiple other interagency collaborative processes. Non-native invasive control activities should continue in the future under this program. Within the context of the BDCP discussions, it is suggested that investments in the control of non-native invasive species be prioritized for areas that would yield the most ecological "bang for the buck": existing and newly restored habitat areas.
- p. 40, lines 18-21: This is a concept that requires full evaluation using conceptual models and scientific evaluation tools developed in the DRERIP process. The variable salinity hypothesis is one that is being considered, but pending development of more details it may be premature to proceed with full scale implementation.
- p. 40, line 28: See suggested changes to Action 6.2 above.
- p. 41, lines 5-7: It is good that transport of methylmercury is mentioned here. In accordance with Central Valley Regional Water Quality Control Board's proposed TMDL for methylmercury in the Delta, the bulk of total and methylmercury entering the Delta is from upstream sources. While local production of methylmercury within the Delta is part of the problem, controlling its production is only half of a potential solution – the other half involves controlling the release of methylmercury-laden water (e.g. holding it in storage ponds for ~30 days) into the system.
- p. 41, lines 10-11: See suggested changes to Action 6.3 above.
- p. 41, lines 35-36: As is the case with non-native invasive species control (Action 6.1), this Action would be implemented with priority being given to existing and newly-restored habitat areas, as opposed to "Deltawide".
- p. 41, line 43: See suggested changes to Action 6.3 above. This should be implemented as part of a comprehensive regional monitoring program, and the Action should be explicit about this (it appears on p. 42, lines 7-10, almost as an afterthought). The program should monitor toxic contaminants as well as conditions such as dissolved oxygen, temperature, and other water quality parameters that may degrade water quality conditions for species.
- p. 42, lines 13: See suggested changes to Action 6.4 above. The creation of water treatment wetlands is a concept that has not been fully evaluated utilizing DRERIP conceptual models. Absent potential pilot studies, it may be premature to suggest that these should be implemented wherever feasible.

## **Water Supply and Reliability**

- p. 44, lines 13-37: Suggest adding another bullet: "Gain an understanding of what amounts of water are used by riparian water rights holders."
- p. 44, lines 40-41: See suggested changes to Action 7.2 above.

- p. 45, lines 26-45: Suggest adding another bullet: "Implement a water "market" as outlined in both PPIC reports." This will create a real incentive for conservation at the individual level.
- p. 49, lines 14-23: Suggest adding another bullet: "The State should increase its public education and outreach to communities, to inform citizens of the widespread existing use of recycled water." Many people don't realize that if they take their water from downstream areas in a river system, they are essentially drinking and using water that has been "recycled" from upstream areas. Once people realize that this is already occurring, and that recycled water may be more reliable and have stricter standards due to its perceived origin, they may not be as averse to pursuing direct use of recycled water for drinking water purposes.
- p. 50, line 34: add ", ecosystem restoration," between the words "management" and "flood control".
- p. 51, line 14: add "and ecosystem restoration" between the words "supply" and "planning".
- p. 52, lines 31-33: See suggested edits to Action 8.2 above.
- p. 52, line 41: add "and ecosystem enhancements such as floodplain inundation." after the word "storage".
- p. 53, lines 19-22: See suggested changes to Action 8.3 above.
- p. 53, line 28: add "and/or ecosystem enhancement" after the word "storage".
- p. 53, line 30: the capacity of the downstream area(s) to handle flows for ecological purposes (e.g. inundation of floodplain areas on Pescadero Tract) may be expanded in the not-too-distant future, and should be considered in "setting the upper limit for the entire system" as such projects come online.
- p. 57, lines 5-6: See suggested changes to Action 8.7 above.
- p. 58, lines 6-7: See suggested changes to Action 8.8 above.
- p. 58, line 10: Add ", poor ecosystem health," after the word "control".
- p. 59, lines 1-3: (See also the initial comments on Water Supply Reliability section on page 9 of this document.) While on the surface this strategy seems to be a good idea, it is one that is currently under evaluation by ecosystem restoration practitioners and fisheries agencies working to recover species that use the Delta. High Delta outflows during flood events yield a great deal of benefit to species of concern. Also note (p. 58, lines 28-29), future climate change may yield less water supply during what we would currently consider "wet" conditions than it does presently (also underscoring the continued species' need for water during these wet periods). This overarching comment also applies to Actions (and supporting text) 9.2, 9.4, and 9.6.
- p. 61, lines 6-8: See above comments relating to the need to continue to evaluate this Strategy and some directly related Actions.

